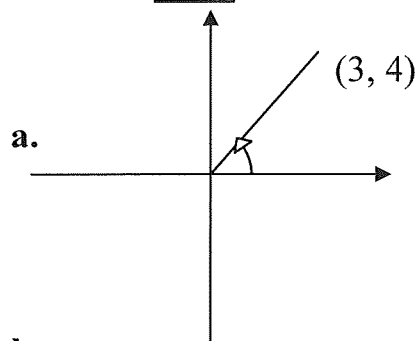
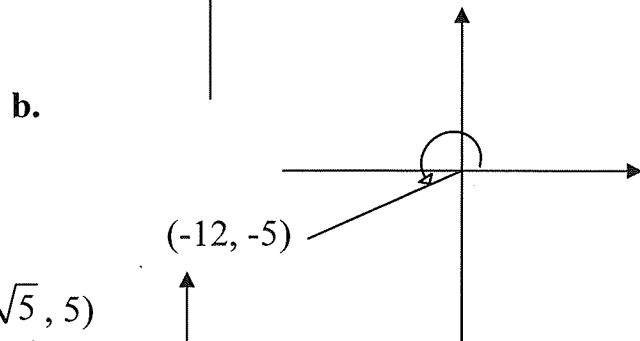


Practice 7.5: Trig Functions & Reference Angles

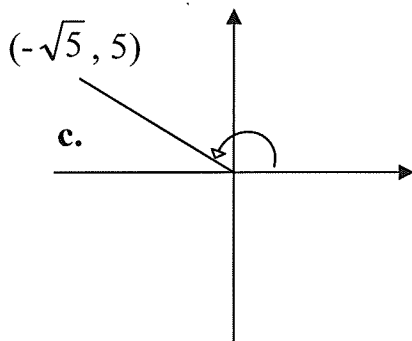
1. Find the exact value of the six trig functions of the angle θ .



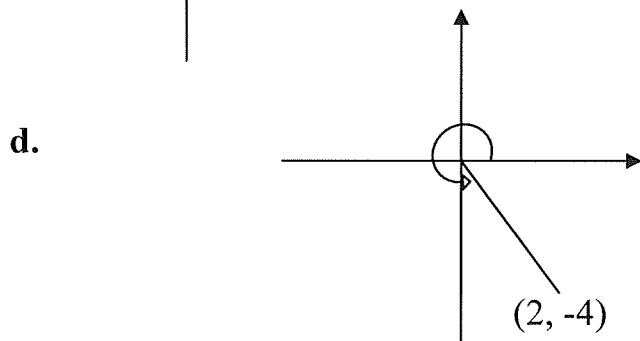
$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$



$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$



$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$



$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$

e. Terminal pt: (7, 24)

$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$

f. Terminal pt: (7, -24)

$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$

g. Terminal pt: (-9, -40)

$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$

h. Terminal pt: (-3, 5)

$$\begin{aligned} \sin \theta &= & \csc \theta &= \\ \cos \theta &= & \sec \theta &= \\ \tan \theta &= & \cot \theta &= \end{aligned}$$

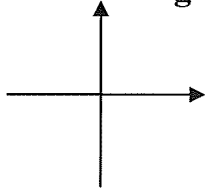
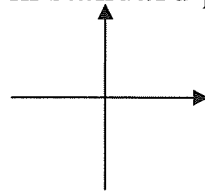
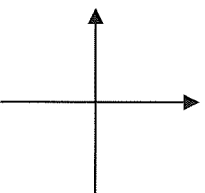
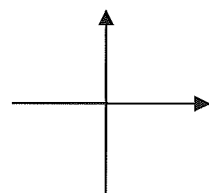
2. Determine which quadrant θ is in.

- | | |
|--|--|
| a. $\sin \theta < 0$ & $\cos \theta < 0$ | b. $\sin \theta > 0$ & $\cos \theta < 0$ |
| c. $\sin \theta > 0$ & $\cos \theta > 0$ | d. $\sin \theta < 0$ & $\cos \theta > 0$ |
| e. $\sin \theta > 0$ & $\tan \theta < 0$ | f. $\cos \theta > 0$ & $\tan \theta < 0$ |
| g. $\sec \theta > 0$ & $\cot \theta < 0$ | h. $\csc \theta < 0$ & $\tan \theta > 0$ |

Use the value of the given function to evaluate the remaining ones.

- | | | |
|----------------------------------|--------------------|--------------------|
| 4. $\sin \theta = \frac{3}{5}$ | a. $\cos \theta =$ | b. $\tan \theta =$ |
| θ in QII | c. $\csc \theta =$ | d. $\sec \theta =$ |
| 5. $\tan \theta = -\frac{15}{8}$ | a. $\cos \theta =$ | b. $\sin \theta =$ |
| $\sin \theta < 0$ | c. $\csc \theta =$ | d. $\sec \theta =$ |

6. Find and sketch the angle θ and the reference angle in standard position.

- | | | | |
|-------------------------------|---|------------------------------|---|
| a. $\theta = 240^\circ$ |  | b. $\theta = 135^\circ$ |  |
| c. $\theta = \frac{11\pi}{6}$ |  | d. $\theta = \frac{2\pi}{3}$ |  |

7. Find the sin, cos and tan of each angle without a calculator.

- | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|
| a. $\theta = 225^\circ$ | b. $\theta = 120^\circ$ | c. $\theta = 330^\circ$ | d. $\theta = 570^\circ$ |
| $\sin \theta =$ | $\sin \theta =$ | $\sin \theta =$ | $\sin \theta =$ |
| $\cos \theta =$ | $\cos \theta =$ | $\cos \theta =$ | $\cos \theta =$ |
| $\tan \theta =$ | $\tan \theta =$ | $\tan \theta =$ | $\tan \theta =$ |
| e. $\theta = \frac{5\pi}{6}$ | f. $\theta = \frac{7\pi}{4}$ | g. $\theta = \frac{4\pi}{3}$ | h. $\theta = -\frac{\pi}{3}$ |
| $\sin \theta =$ | $\sin \theta =$ | $\sin \theta =$ | $\sin \theta =$ |
| $\cos \theta =$ | $\cos \theta =$ | $\cos \theta =$ | $\cos \theta =$ |
| $\tan \theta =$ | $\tan \theta =$ | $\tan \theta =$ | $\tan \theta =$ |